

Title (en)  
NEURAL NETWORK PROCESSING ELEMENT INCORPORATING COMPUTE AND LOCAL MEMORY ELEMENTS

Title (de)  
VERARBEITUNGSELEMENT EINES NEURONALEN NETZWERKS MIT RECHEN- UND LOKALEN SPEICHERELEMENTEN

Title (fr)  
ÉLÉMENT DE TRAITEMENT DE RÉSEAU NEURONAL AUQUEL SONT INTÉGRÉS DES ÉLÉMENTS DE MÉMOIRE LOCALE ET DE CALCUL

Publication  
**EP 3607500 B1 20231220 (EN)**

Application  
**EP 18781080 A 20180403**

Priority

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Abstract (en)  
[origin: US2018285254A1] A novel and useful system and method of accessing multi-dimensional data in memory. The invention is applicable to neural network (NN) processing engines adapted to implement artificial neural networks (ANNs). The NN processor is constructed from self-contained computational units organized in a hierarchical architecture. The homogeneity enables simpler management and control of similar computational units, aggregated in multiple levels of hierarchy. Computational units are designed with minimal overhead as possible, where additional features and capabilities are aggregated at higher levels in the hierarchy. On-chip memory provides storage for content inherently required for basic operation at a particular hierarchy and is coupled with the computational resources in an optimal ratio. Lean control provides just enough signaling to manage only the operations required at a particular hierarchical level. Dynamic resource assignment agility is provided which can be adjusted as required depending on resource availability and capacity of the device.

IPC 8 full level  
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CPC (source: EP US)  
**G06F 5/01** (2013.01 - US); **G06F 7/501** (2013.01 - US); **G06F 7/523** (2013.01 - US); **G06F 9/30054** (2013.01 - US); **G06F 9/5016** (2013.01 - US); **G06F 9/5027** (2013.01 - US); **G06F 12/02** (2013.01 - US); **G06F 12/0207** (2013.01 - EP US); **G06F 12/0646** (2013.01 - EP US); **G06F 12/0692** (2013.01 - EP US); **G06F 13/1663** (2013.01 - EP US); **G06F 17/110** (2013.01 - US); **G06F 30/27** (2020.01 - US); **G06F 30/30** (2020.01 - US); **G06N 3/02** (2013.01 - US); **G06N 3/04** (2013.01 - US); **G06N 3/045** (2023.01 - EP US); **G06N 3/063** (2013.01 - EP US); **G06N 3/08** (2013.01 - US); **G06N 3/084** (2013.01 - EP US); **G06N 20/00** (2019.01 - US); **G06N 3/082** (2013.01 - EP US); **Y02D 10/00** (2018.01 - US)

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